

Fact Sheet
Lower Eight Miles of the Lower Passaic River
Focused Feasibility Study

As of 8 March 2013

During a comprehensive study of the Lower Passaic River (from Newark Bay to Dundee Dam), a part of the Diamond Alkali Superfund Site, the sediments of the lower eight miles (from Newark Bay to the border between Newark and Belleville) were found to be a major source of contamination to the rest of the river and Newark Bay. Therefore, the United States Environmental Protection Agency (EPA) completed a Focused Feasibility Study (FFS) to evaluate taking action to address those sediments, while the 17-mile Lower Passaic River Remedial Investigation and Feasibility Study (RI/FS) is on-going.

There are high concentrations of persistent and bioaccumulative contaminants widespread throughout the sediments of the lower eight miles that are causing unacceptably high human health and ecological risks. Also, the highly-contaminated sediments in the lower eight miles are being resuspended through tidal action and storm events, and migrating to Newark Bay and the New York-New Jersey Harbor Estuary. Data show that other sources, such as the Upper Passaic River, Newark Bay, tributaries, combined sewer overflows (CSOs) and storm water outfalls (SWOs), are less significant contributors of contamination to the river, when compared to the resuspension of legacy sediments in the main stem of the lower eight miles.

The contaminants of concern tend to bind to fine-grained sediments. Surveys of the bottom of the river show that the lower eight miles consist mostly of fine-grained sediments with pockets of coarse-grained sands. In contrast, the upper nine miles consist mostly of coarse-grained sands with pockets of fine-grained sediments. Therefore, the majority of the surface sediment contamination is located in the lower eight miles.

The FFS evaluates four alternatives for remediating the sediments of the lower eight miles.

1. No Action: Does not include any dredging, capping or backfill, disposal, or treatment of contaminated sediments. The Superfund program requires that No Action be evaluated.
2. Deep Dredging with Backfill: Involves dredging all fine-grained sediments in the lower eight miles (9.7 million cubic yards) and covering with two feet of sand (backfill). It results in the restoration of the authorized navigation channel in the lower eight miles. Dredged mudflats would be restored. Construction would last about 12 years. Cost estimate: \$1.4 to \$3.5 billion, depending on the disposal option (see below).
3. Capping with Dredging for Flooding and Navigation: Includes dredging of enough fine-grained sediment (4.3 million cubic yards) to ensure that an engineered cap can be

placed without causing additional flooding and to allow for a navigation channel in the lowest two miles. Dredging is followed by placement of an engineered cap over the lower eight miles. Dredged mudflats would be restored. Construction would last about 6 years. Cost estimate: \$1.0 to \$1.8 billion, depending on disposal option (see below).

4. Focused Capping with Dredging for Flooding: Includes dredging to a depth of 2.5 feet the fine-grained sediments (900,000 cubic yards) in the one-third of the lower eight miles that contribute the most contamination so that an engineered cap can be placed over those portions dredged without causing additional flooding. It does not include construction of a navigation channel. Construction would last about 3 years. Cost estimate: \$0.4 to \$0.6 billion, depending on disposal option (see below).

Since all of the alternatives (except for No Action) would involve removing sediments from the river, they all include three possible disposal options for those sediments, as follows.

- A. Confined Aquatic Disposal (CAD): Cells dug into the tight clay at the bottom of Newark Bay would serve as secure containers for the sediments dredged from the Passaic River.
- B. Off-Site Disposal: Sediments dredged from the Passaic River would be dewatered, loaded onto rail containers and shipped to incinerators and landfills.
- C. Local Decontamination and Beneficial Use: Sediments dredged from the Passaic River would be processed by innovative technologies that would remove contaminants from the sediment particles, resulting in an end-product that could be beneficially reused. Innovative technologies evaluated include thermal treatment and sediment washing.

Superfund law requires that the four alternatives, including the three disposal options, be evaluated against the nine criteria:

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| 1. Overall protection of human health and the environment | 4. Reduction of toxicity, mobility or volume |
| 2. Compliance with applicable or relevant and appropriate requirements | 5. Short-term effectiveness |
| 3. Long-term effectiveness and permanence | 6. Implementability |
| | 7. Cost |
| | 8. State acceptance |
| | 9. Community acceptance |

Results of this analysis, which is underway, will be described in detail in the FFS and will form the basis for EPA's selection of a preferred remedy for the lower eight miles. That preferred remedy will be described in a Proposed Plan that will be issued for public comment.